

CONNECTING STRATEGIC PLANNING WITH FOREST OPERATIONS USING THE FOREST ADAPTIVE MANAGEMENT ONLINE USER SYSTEM (FAMOUS)

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EXTENDED ABSTRACT

Forests in the Southeastern United States have always been impacted by various disturbances, including wildfires, storms, insects, and diseases. Through increasing temperatures and drought, climate change amplifies these threats and adversely affects forest productivity and resilience. There are many forest management and planning resources, but traditional strategic planning and management practices often do not address the evolving threats of climate change and variability. Therefore, the Forest Service, U.S. Department of Agriculture (USDA), Southeast Climate Hub is currently developing a three-component tool that will improve forest management as environmental challenges to forests continue to evolve.

The Template for Assessing Climate Change Impacts and Management Options (TACCIMO), the first component, is a tool that was developed by the Forest Service as an online database of climate change impacts and adaptation options for forests across the United States. TACCIMO has been used by the National Forest System for over a decade to assist with long-term (i.e., strategic) forest planning and is continuously being updated with the most recent scientific findings on forest threats and adaptation. Forest managers use TACCIMO's dropdown menus to select location, forest type, and management goal of interest. TACCIMO then searches the database and generates a report of potential impacts to those forests and strategies to increase forest resiliency. These recommendations are broad (e.g., reduced stand density will reduce insect outbreaks associated with drought) and developed for use in forest planning, but not operational management.

The Forest Operation Resource Tool (FORT), the second component, is an electronic version of the silviculture prescriptions and management recommendations from the handbook of the Society of American Foresters and the handbook of the Forest Service (among others). Like TACCIMO, FORT will also use a dropdown menu to allow the forest manager to select their location, forest type, age, stand condition, and management goal. FORT will then search through the database to provide tactical (i.e., operational) level management prescriptions.

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The Forest Adaptive Management Online User System (FAMOUS), the third component, is a tool being developed to combine the broad adaptive forest management recommendations from TACCIMO and the operational scale of FORT. The design of FAMOUS is intended to be an interactive tool that forest managers can use to find management techniques that adapt to a changing climate. Forest managers may use adaptative techniques from FAMOUS to manage stands in the face of a specific threat. For example, potential southern pine beetle damage within a particular pine stand may be of particular concern. Users can select options for their management goal, forest type, threat, and ecoregion in the interface of FAMOUS. Based on the selections made, a climate-smart adaptive management plan will be produced that includes specific, operational management options from FORT (e.g., thinning to a specific stand density) that are adapted using strategic information from TACCIMO.

Future iterations of FAMOUS will include geospatial components and information from forest inventory and monitoring (e.g., stand stocking data from the National Forest System). FAMOUS is designed to be used interactively, to help find the best, science-backed adaptive practices to address changing forest threats. FAMOUS will initially be developed for the Southeastern United States, and if successful, the tool will expand across the United States.